

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A metal-air cathode assembly, the metal-air cell cathode assembly comprising:

an air diffusion layer equipped to receive air and deliver the received air to the cathode assembly; and,

an active layer including longitudinally extending electrically conducting wires interwoven with laterally extending electrically conducting wires that intersect at joints to form a mesh, and a metal comprising nickel deposited onto **outer surfaces of** the wires that bonds the longitudinally extending wires to the laterally extending wires at the joints to form a screen, **wherein the metal comprising nickel deposited onto the outer surfaces of the wires forms nodules that protrude outwardly from the outer surfaces of the wires, and further wherein the nodules comprise columnar grains that are substantially parallel to each other and that extend substantially normal to and outwardly from the outer surface of the wires.**

2. (Canceled)

3. (Currently Amended) The cathode assembly as recited in claim 1, wherein the metal **comprising nickel** is electroplated onto the wires.

4. (Currently Amended) The cathode assembly recited in claim 1, wherein the metal **comprising nickel** is deposited by electroless deposition, sputter deposition, or chemical deposition.

5-6. (Canceled)

7. (Currently Amended) The cathode assembly as recited in claim ~~6~~ 1, further comprising ~~nodules extending from the surface~~ wherein the nodules are between 10 to 100 μm in diameter.

8. (Currently Amended) The cathode assembly as recited in claim ~~5~~ 1, wherein the ~~outer surface and nodules further comprise~~ **columnar** grains having ~~have~~ diameters between 1 and 30 μm .

9. (Currently Amended) The cathode assembly as recited in claim ~~5~~ 1, wherein the nodules occupy between 5 and 50 percent of a surface area of the **metal comprising** nickel **deposited on the outer surfaces of the wires**.

10. (Original) The cathode assembly as recited in claim 1, wherein the wires comprise nickel.

11. (Original) The cathode assembly as recited in claim 1, wherein the wires comprise a transition metal.

12. (Previously Presented) The cathode assembly as recited in claim 1, further comprising an active carbon catalyst disposed on an outer surface of the screen.

13-63. (Canceled)

64. (Previously Presented) The cathode assembly as recited in claim 12, wherein the active carbon catalyst comprises a mixture of carbon and PTFE in contact with the screen.

65. (New) A metal-air cathode assembly, the metal-air cell cathode assembly comprising:

an air diffusion layer equipped to receive air and deliver the received air to the cathode assembly; and,

an active layer including longitudinally extending electrically conducting wires interwoven with laterally extending electrically conducting wires that intersect at joints to form a mesh, and a metal comprising nickel deposited onto outer surfaces of the wires as an outer layer that bonds the longitudinally extending wires to the laterally extending wires at the joints to form a screen, wherein the deposited layer of the metal comprising nickel bonds the wires as a single metallurgical unit.

66. (New) The cathode assembly as recited in claim 65, wherein the metal comprising nickel is electroplated onto the outer surfaces of the wires.

67. (New) The cathode assembly recited in claim 65, wherein the metal comprising nickel is deposited by electroless deposition, sputter deposition, or chemical deposition.

68. (New) The cathode assembly as recited in claim 65, wherein the metal comprising nickel deposited on the outer surfaces of the wires forms nodules that protrude outwardly from the outer surfaces of the wires.

69. (New) The cathode assembly as recited in claim 68, wherein the metal comprising nickel deposited onto outer surfaces of the wires comprises columnar grains that are substantially parallel to each other and that extend substantially normal to and outwardly from the outer surface of the wires.

70. (New) The cathode assembly as recited in claim 68, wherein the nodules are between 10 to 100 μm in diameter.

71. (New) The cathode assembly as recited in claim 69, wherein the columnar grains have diameters between 1 and 30 μm .

72. (New) The cathode assembly as recited in claim 68, wherein the nodules occupy between 5 and 50 percent of a surface area of the metal comprising nickel deposited on the outer surfaces of the wires.

73. (New) The cathode assembly as recited in claim 65, wherein the wires comprise nickel.

74. (New) The cathode assembly as recited in claim 65, wherein the wires comprise a transition metal.

75. (New) The cathode assembly as recited in claim 65, further comprising an active carbon catalyst disposed on an outer surface of the screen.

76. (New) The cathode assembly as recited in claim 75, wherein the active carbon catalyst comprises a mixture of carbon and PTFE in contact with the screen.

77. (New) A metal-air cathode assembly, the metal-air cell cathode assembly comprising:

an air diffusion layer equipped to receive air and deliver the received air to the cathode assembly; and,

an active layer including longitudinally extending electrically conducting wires interwoven with laterally extending electrically conducting wires that intersect at joints to form a mesh, and a metal comprising nickel deposited onto outer surfaces of the wires that bonds the longitudinally extending wires to the laterally extending wires at the joints to form a screen, wherein the resulting screen has a total height which exceeds the cumulative diameter of the longitudinally extending electrically conducting wires and the laterally extending electrically conducting wires.

78. (New) The cathode assembly as recited in claim 77, wherein the metal comprising nickel is electroplated onto the outer surfaces of the wires.

79. (New) The cathode assembly recited in claim 77, wherein the metal comprising nickel is deposited by electroless deposition, sputter deposition, or chemical deposition.

80. (New) The cathode assembly as recited in claim 77, wherein the metal comprising nickel deposited on the outer surfaces of the wires forms nodules that protrude outwardly from the outer surfaces of the wires.

81. (New) The cathode assembly as recited in claim 80, wherein the metal comprising nickel deposited onto outer surfaces of the wires comprises columnar grains that are substantially parallel to each other and that extend substantially normal to and outwardly from the outer surface of the wires.

82. (New) The cathode assembly as recited in claim 80, wherein the nodules are between 10 to 100 μm in diameter.

83. (New) The cathode assembly as recited in claim 81, wherein the columnar grains have diameters between 1 and 30 μm .

84. (New) The cathode assembly as recited in claim 80, wherein the nodules occupy between 5 and 50 percent of a surface area of the metal comprising nickel deposited on the outer surfaces of the wires.

85. (New) The cathode assembly as recited in claim 77, wherein the wires comprise nickel.

86. (New) The cathode assembly as recited in claim 77, wherein the wires

comprise a transition metal.

87. (New) The cathode assembly as recited in claim 77, further comprising an active carbon catalyst disposed on an outer surface of the screen.

88. (New) The cathode assembly as recited in claim 87, wherein the active carbon catalyst comprises a mixture of carbon and PTFE in contact with the screen.